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EXAMINER	
HURST, JONATHAN M	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
06/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/505,416	Applicant(s) KAWAZOE ET AL.	
	Examiner JONATHAN M. HURST	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 28 April 2010.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/16/2010, 05/11/2010, and 04/28/2010.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/28/2010 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7/2, 7/3, 10-11, 14/11, and 17/1/2- 20/1/2 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (US 2002/0015952).

Regarding claim 1 Anderson et al. discloses a support unit for a microfluidic system (See [003], Fig. 1, and Fig. 4), comprising: a first support; (See [0014] and Fig. 4 31 and Fig. 1 where underlying arrays are a support see [00235]) a first adhesive layer

provided on a surface of the first support (See [0133] and [0189] where adhesive surface is used to attach arrays); and a hollow filament laid on a surface of the first adhesive layer to have an arbitrary shape and functioning as a flow channel layer of the microfluidic system. (See [0090], [0133], and [0063] where microarray chip contains a bundle of small plastic rods and alternatively Fig. 1 where first support is an underlying flat array 2 made of hollow filaments 1 see [0235])

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding claim 2 Anderson et al. discloses a support unit for a microfluidic system (See [003]), comprising: a first support (See [0014] and Fig. 4 31 and Fig. 1 where underlying arrays are a support see [00235]); a first adhesive layer provided on a surface of the first support (See [0133], and [0189]); and a first hollow filament group constituted by a plurality of hollow filaments laid on a surface of the first adhesive layer and respectively functioning as a plurality of flow channel layers of the microfluidic system. (See [0090], [0133], and [0063] where microarray chip contains a bundle of small plastic rods and alternatively Fig. 1 where first support is an underlying flat array 2 see [0235])

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding claim 3 Anderson et al. discloses all the claim limitations as set forth above as well as the support unit further comprising: a second adhesive layer provided on a surface of the first hollow filament group; and a second support provided on a surface of the second adhesive layer. (See Fig. 1 where multiple arrays 2 are stacked to give a bundle 3 using adhesive see [0189] and [0235] where second support is an overlying second array attached to first array with adhesive)

Regarding claim 7/2 and 7/3, Anderson et al. discloses all the claim limitations as set forth above as well as the support unit wherein at least one of the plurality of hollow filaments is partially provided with an optically transparent portion. (See [0191] and Fig. 6 where bundle 50 contains optically transparent filaments 51)

It is noted that any shape may be an “arbitrary shape” and as such every material is capable of becoming an “arbitrary shape” and as such the filaments of Anderson are made of a materials which can become an arbitrary shape.

Regarding claim 10, Anderson et al. discloses a manufacturing method of a support unit for a microfluidic system (See [0002] ,Fig. 1, and Fig. 4), comprising: forming a first adhesive layer on a surface of a first support; and laying a hollow filament on a surface of the first adhesive layer. (See Fig. 4, [0090], [0133], and [0063] where microarray chip contains a bundle of small plastic rods held by adhesive surface on a first surface and alternatively Fig. 1 where first support is an underlying flat array 2 made of hollow filaments 1 see [0235])

It is noted that any shape may be an “arbitrary shape” and as such every material is capable of becoming an “arbitrary shape” and as such the filaments of Anderson are made of a materials which can become an arbitrary shape.

Regarding claim 11, Anderson et al. discloses a manufacturing method of a support unit for a microfluidic system ([0002], Fig. 1, and Fig. 4), comprising: forming a first adhesive layer on a surface of a first support; and laying a first hollow filament group constituted by a plurality of hollow filaments, on a surface of the first adhesive layer. (See Fig. 4, [0090], [0133], and [0063] where microarray chip contains a bundle of small plastic rods held by adhesive surface on a first surface and alternatively Fig. 1 where first support may be an underlying flat array 2 made of hollow filaments 1 held together with adhesive see [0235] and [0189])

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding claim 14/11 Anderson et al. discloses all the claim limitations as set forth above as well as the manufacturing method of a support unit for a microfluidic system, after the laying the first hollow filament group, the manufacturing method further comprising: forming a second adhesive layer on a surface of the first hollow filament group; and adhering a second support onto a surface of the second adhesive layer. (See Fig. 1 where multiple arrays 2 are stacked to give a bundle 3 using adhesive

[0189] and [0235] where second support is an overlying second flat array attached to first array with adhesive)

Regarding claim 17/1/2 Anderson et al. discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with chemically resistant hollow filaments. It is noted that since the hollow filaments of Anderson et al. are able to be produced without instantaneous degradation they must be chemically resistant to some extent.

Regarding claim 18/1/2 Anderson et al. discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with hollow filaments made from an organic material. (See [0086] where the filaments may be made from various organic materials such as polyvinyl chloride)

Regarding claim 19/1/2 Anderson et al. discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with hollow filaments made from an inorganic material. (See [0054] where the filaments may be made from glass or metal.)

Regarding claim 20/1/2 Anderson et al. discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system wherein the said hollow

filament has a curved shape. (See Figure 1 where the hollow filaments are cylindrical and as such have a curved shape.

3. Claims 2, 5/2, and 6/2 are rejected under 35 U.S.C. 102(b) as being anticipated by Frazier et al. (WO 00/16833)

Regarding claim 2, Frazier et al. discloses a support unit for a microfluidic system (See Fig. 1 and C 1 L 10-17) comprising: a first support (See Fig. 1 12) a first adhesive layer provided on a surface of the first support (See Fig. 1 and C 11 L 54-60 where microneedles 16 are bound to an interface using epoxy and C 7 L 45-50 where arrays of needles are placed on a substrate and bonded using adhesive); and a first hollow filament group constituted by a plurality of hollow filaments laid on a surface of the first adhesive layer and respectively functioning as a plurality of flow channel layers of the microfluidic system. (See Fig. 1 16 and Abstract)

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding claim 5/2, Frazier et al. discloses all the claim limitations as set forth above as well as the support unit wherein the plurality of hollow filaments is partially exposed from the first support. (See Fig. 1 where end of needles 18 are exposed from support 12 and C 3 L 55-67)

Regarding claim 6/2 Frazier et al. discloses all the claim limitations as set forth above as well as the support unit wherein a metal film is formed on a part of at least one of the plurality of hollow filaments. (See Fig. 1 C 7 L 8-14 where microneedles 16 are coated with gold and C 4 L 43-54 where microneedles can be formed from metal materials)

Claim Rejections - 35 USC § 102 or 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2-5, 7, 11, and 13/11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Durst et al. (DE4308697)

Regarding claims 2-5, and 7 Durst et al. discloses a support unit for a microfluidic system (See Fig. 1 and Abstract) comprising: a first support (See Fig. 1 4); and a first hollow filament group constituted by a plurality of hollow filaments laid on a surface of the first support and respectively functioning as a plurality of flow channel layers of the microfluidic system(See Fig. 1 where hollow filament group 1' is placed on top of support 4 and Abstract), a second support provided on the surface of the second adhesive layer(See Fig. 1 where second support 5 is on top of first filament group 1'), and wherein the plurality of hollow filaments is partially exposed from the first support and at least one of the filaments is partially optically transparent. (See Fig. 1 where Filaments 1' are exposed on the side from the first support and are hollow and thus contain an optically transparent center) and the support unit further comprising a second hollow filament group constituted by a plurality of hollow filaments laid in a direction so as to intersect with the first hollow filament group (See Fig. 1 1 and 1' where a second hollow filament group 1 is placed on top of a first hollow filament group 1' in an intersecting direction) and functioning as another plurality of flow channel layers of the microfluidic system (See Abstract)

Durst et al., in Fig. 1 teaches a support unit for a fluidic system that appears to be the same as, or an obvious variant of the support unit comprising adhesive layers provided on the surface of a first support and second support. Assuming even if Durst et al. does not disclose adhesive layers between hollow filament groups and supports adhesive layers are very well known in the art to provide a permanent way to securely affix items to support such as hollow filaments. It would have been obvious to one of

ordinary skill in the art to use adhesive layers to bind hollow filaments to supports as is known in the art in order to provide a more secure and permanent attachment of said hollow filaments to said supports in the device of Durst.

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding claims 11 and 13/11, Durst et al. discloses a manufacturing method of a support unit for a microfluidic system (See Abstract), comprising: forming a first support; and laying a first hollow filament group constituted by a plurality of hollow filaments, on a surface of the first support. (See Fig. 1 where hollow filament group 1' is placed on top of support 4)

Durst et al., in Fig. 1 teaches a support unit for a fluidic system that appears to be the same as, or an obvious variant of the support unit comprising a first adhesive layer provided on the surface of a first support and hollow filament group laid on said first adhesive layer as set forth in the instant claim as the hollow filaments disclosed by Durst et al. are held in place to a support.

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Regarding Claim 13/11, Durst et al. discloses all the claim limitations as set forth above as well as the manufacturing method of a support unit for a microfluidic system, further comprising laying a second hollow filament group constituted by a plurality of

hollow filaments in a direction so as to intersect with the first hollow filament group, after the laying the first hollow filament group. (See Fig. 1 1 and 1' where a second hollow filament group 1 is placed on top of a first hollow filament group 1' in an intersecting direction).

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Claim Rejections - 35 USC § 103

7. Claim 6/2 and 6/3, is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claims 1-3, 7, 10-11, and 14 above, and further in view of Frazier et al. (WO 00/16833)

Regarding claim 6/2 and 6/3, Anderson discloses all the claim limitations as set forth above but does not disclose providing a metal film is formed on a part of at least one of the plurality of hollow filaments.

Frazier et al. discloses all the claim limitations as set forth above as well as the support unit wherein a metal film is formed on a part of at least one of the plurality of hollow filaments. (See Fig. 1 C 7 L 8-14 where microneedles 16 are coated with gold and C 4 L 43-54 where microneedles can be formed from metal materials)

It would have been obvious to one of ordinary skill in the art at the time of invention to provide a metal film on a capillary as described by Frazier in the device of Anderson because metals layers are well known in the art to coat capillary tubes on

supports and would have provided the capillaries of Anderson with strength, durability, and biocompatibility as is required by Anderson. (See [0003] where Anderson is used to handle biomaterials and thus must have biocompatibility)

8. Claims 8-9, 15-16, 17/8, 18/8, 19/8 and 20/8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claims 1-3, 7, 10-11, and 14 above, and further in view of Wolk (US 6,148,508).

Regarding claims 8-9, Anderson et al. discloses a support unit for a microfluidic system (See [003], Fig. 1, and Fig. 4), comprising: a first support (See [0014] and Fig. 4 31 or alternatively Fig. 1 where support is an underlying array see [0235]); a first adhesive layer provided on a surface of the first support (See [0133] where adhesive surface is used to attach arrays to a first surface and [0189] where adhesive binds arrays); a plurality of hollow filaments laid on a surface of the first adhesive layer (See Fig. 4 where hollow filaments are on support 31 and Fig. 1 where arrays are bundled using adhesive see[0189]); a second adhesive layer provided on the first adhesive layer and the hollow filaments; a second support provided on a surface of the second adhesive layer; (See Fig. 1 where multiple arrays 2 are stacked to give a bundle 3 using adhesive see [0189] and [0235] where second support is a second overlying array attached to first array with adhesive)

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Anderson et al. does not disclose a relay portion provided in the first adhesive layer and the second adhesive layer and connecting routes of the hollow filaments as well as the support unit wherein the relay portion includes a part of the second support.

Wolk discloses a support unit for a microfluidic system, comprising: a first support (See Fig. 4 B 402a) ; a plurality of channels laid on a surface (See Fig. 4A); a second support provided on a surface of the first support (See Fig. 4B 402b); and a relay portion provided in the first support and the second support and connecting routes of channels (See Fig. 4B where relay is formed by 42a and 442b and connects routes of channels 438 and 404) as well as the support unit wherein the relay portion includes a part of the second support. (See Fig. 4B substrate 402b and relay portion 442b). While Wolk does not specifically disclose the relay portion being formed in adhesive layers when substrates are bound using an adhesive, which is known in the art (See Wolk C 6 L 62- C 7 L 2), and relay portion such as 442 is formed in said substrates it must be formed through adhesive layers.

Wolk and Anderson et al. are analogous because both references teach the use of flow channels disposed between two substrates.

It would have been obvious to one of ordinary skill in the art at the time of invention to form a relay channel as described by Wolk in the support unit of Anderson because the relay channel provides an effective way of connecting channels and

electrokineticly transporting material into a microarray as described by Anderson. (See Wolk C 1 L 45-63 and Anderson [0152])

Regarding Claim 15-16, Anderson et al. discloses a manufacturing method of a support unit for a microfluidic system (See [0002], Fig. 1, and Fig. 4) , comprising: forming a first adhesive layer on a surface of a first support (See Fig. 1 where support is an underlying array bound with adhesive see [0235] and [0189]); laying a plurality of hollow filaments on a surface of the first adhesive layer (See Fig. 1, [0090], [0133], [0189], and [0063] where filaments are attached to an adhesive surface); forming a second adhesive layer on the first adhesive layer and the hollow filaments (See [0189] and [0235] where second array is placed on top of a first array using adhesive); and adhering a second support onto a surface of the second adhesive layer. (See Fig. 1 where multiple arrays 2 are stacked to give a bundle 3 using adhesive see [0189] and [0235] where second support is a second overlying array attached to first array with adhesive)

It is noted that all materials are flexible to some extent and as such the hollow filament is inherently flexible to some extent.

Anderson does not disclose forming a relay portion in the first adhesive layer and the second adhesive layer wherein the forming of the relay portion in the first adhesive layer and the second adhesive layer further includes forming the relay portion so that the second support becomes a part of the relay portion.

Wolk discloses a manufacturing method of a support unit for a microfluidic system (See Abstract), comprising: forming a relay portion in a first adhesive layer and a second adhesive layer (See Wolk C 6 L20-36 While Wolk does not specifically disclose the relay portion being formed in adhesive layers when substrates are bound using an adhesive, which is known in the art See Wolk C 6 L 62- C 7 L 2, and relay portion such as 442 is formed in said substrates it must be formed through adhesive layers); and adhering a second support onto a surface of the second adhesive layer (See Wolk C 6 L20-36 and Fig. 4B where second support 402b is adhered to first support 402a and capillary 404) wherein the forming of the relay portion in the first adhesive layer and the second adhesive layer further includes forming the relay portion so that the second support becomes a part of the relay portion. (See Fig. 4B substrate 402b and relay portion 442b and C 6 L20-36)

It would have been obvious to one of ordinary skill in the art at the time of invention to form a relay portion in a first adhesive layer and a second adhesive layer of a microfluidic support unit as described by Wolk in the manufacturing method of a support unit for a microfluidic system described by Anderson because the relay portion provides an effective way of connecting channels and electrokineticly transporting material into a microarray as described by Anderson. (See Wolk C 1 L 45-63 and Anderson [0152])

Regarding claim 17/8 modified Anderson discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with chemically resistant hollow filaments. It is noted that since the hollow filaments of Anderson et al. are able to be produced without instantaneous degradation they must be chemically resistant to some extent.

Regarding claim 18/8 modified Anderson discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with hollow filaments made from an organic material. (See Anderson [0086] where the filaments may be made from various organic materials such as polyvinyl chloride)

Regarding claim 19/8 modified Anderson discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system with hollow filaments made from an inorganic material. (See Anderson [0054] where the filaments may be made from glass or metal.)

Regarding claim 20/8 modified Anderson discloses all the claim limitations as set forth above as well as a support unit for a microfluidic system wherein the said hollow filament has a curved shape. (See Anderson Figure 1 where the hollow filaments are cylindrical and as such have a curved shape.)

9. Claim 12 and 13/12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US2002/0015952) as applied to claims 1-5, 7, 11, and 13 above, and further in view of Matson et al. (US 5,429,807)

Regarding claims 12 Anderson et al. discloses all the claim limitations as set forth above as well as laying a second hollow filament group constituted by a plurality of hollow filaments in a direction so as to intersect with the first hollow filament group, after the laying the first hollow filament group. (See Fig. 1 1 and 1' where a second hollow filament group 1 is placed on top of a first hollow filament group 1' in an intersecting direction) but does not disclose a manufacturing method of a support unit wherein, between the forming the first adhesive layer and laying the first hollow filament group, the manufacturing method further comprising: providing release layers on the surface of the first adhesive layer at positions where the hollow filaments are exposed; and providing a slit in the first support, wherein the first hollow filament group is laid to be in contact with both surfaces of a pair of the release layers.

Matson et al. discloses a manufacturing method of a support unit (See Abstract) comprising providing release layers at positions where channels are exposed (See Fig. 2 channels 14 are exposed through release layers 18 and 19); and providing a slit in a first support (See Fig 2 18 and 19 and C 3 L 50-59 where holes are slits formed in a support plate), wherein the channel group is laid to be in contact with both surfaces of a

pair of the release layers. (See Fig. 2 where channels 14 are in contact with surfaces of release layers 18 and 19)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the release layers of Matson et al. to the support unit of Anderson et al. because the release layers allow the feeding and release of chemicals to a plurality of channels (See Matson C 3 L 50-59) as required by Durst.

10. Claims 12 and 14/12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US2002/0015952) as applied to claims 1-3, 7, 10-11, and 14 above, and further in view of Matson et al. (US 5,429,807)

Regarding claims 12 and 14/12, Anderson et al. discloses all the claim limitations as set forth above as well as forming a second adhesive layer on a surface of the first hollow filament group; and adhering a second support onto a surface of the second adhesive layer. (See Fig. 1 where multiple arrays 2 are stacked to give a bundle 3 using adhesive [0189] and [0235] where second support is an overlying second flat array attached to first array with adhesive) but does not disclose a manufacturing method of a support unit wherein, between the forming the first adhesive layer and laying the first hollow filament group, the manufacturing method further comprising: providing release layers on the surface of the first adhesive layer at positions where the hollow filaments are exposed; and providing a slit in the first support, wherein the first hollow filament group is laid to be in contact with both surfaces of a pair of the release layers.

Matson et al. discloses a manufacturing method of a support unit (See Abstract) comprising providing release layers at positions where channels are exposed (See Fig. 2 channels 14 are exposed through release layers 18 and 19); and providing a slit in a first support (See Fig 2 18 and 19 and C 3 L 50-59 where holes are slits formed in a support plate), wherein the channel group is laid to be in contact with both surfaces of a pair of the release layers. (See Fig. 2 where channels 14 are in contact with surfaces of release layers 18 and 19)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the release layers of Matson et al. to the support unit of Anderson et al. because the release layers allow the feeding and release of chemicals to a plurality of channels (See Matson C 3 L 50-59) as required by Anderson et al. (See Anderson [0223]

Response to Arguments

11. Applicant's arguments filed 04/28/2010 have been fully considered but they are not persuasive.

Applicant argues on page 8 of the response "Examiner states that cylindrical hollow filaments are considered to be "curved". However, Applicants' specification discusses curved shapes in relation to Figure 13 (Applicants' specification, page 34, lines 17-18). It is respectfully submitted that Applicants' curved hollow fibers are curved along their length. Such language clearly not mean a cross sectional round shape. Applicants may be their own lexicographer and the meaning of the claim language of

claim 20 is clear and definite. The inherent ability to be curved is not the same as being curved, and a curved hollow filament would not have been obvious based on inherent ability absent some reason in the cited art to make a curved hollow filament."

It is the examiner's position that the prior art discloses all the claim limitations as described in the rejections above. It is noted that while applicant may be their own lexicographer applicant's specification does not explicitly define how the hollow filaments are curved but merely recites that they are curved. When an article is referred to merely as curved such a limitation is broadly interpreted to include any singular and/or all surfaces of the device may be curved and does not require a lengthwise curvature as applicant asserts.

Furthermore it is noted that the features upon which applicant relies (i.e., the specific filament curvature) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. HURST whose telephone number is (571)270-7065. The examiner can normally be reached on Mon. - Thurs. 6:30-4:00; Every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on (571)272-1374. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. M. H./

Examiner, Art Unit 1797

/Michael A Marcheschi/

Supervisory Patent Examiner, Art Unit 1797